

Erin Berryman

CONTACT INFORMATION

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EDUCATION

Doctor of Philosophy, Natural Resources **2012**

University of Idaho, Moscow, Idaho

Dissertation title: “Quantifying controls on soil respiration in mixed-conifer and piñon-juniper ecosystems”

Advisor: Dr. John D. Marshall

Master of Science, Soil Science **2006**

University of Minnesota, Minneapolis, Minnesota

Thesis title: “Soil phosphorus release from a disturbed prairie wetland and water table restoration impacts on global warming potential”

Advisors: Dr. Rodney Venterea and Dr. John Baker

Bachelor of Science, Environmental Science **2003**

Oklahoma State University, Stillwater, Oklahoma

PROFESSIONAL EXPERIENCE

Research Ecologist **August 2014 – present**

US Geological Survey Geosciences and Environmental Change Science Center, Lakewood, Colorado

Research Associate **September 2013 – August 2014**

University of Colorado Institute of Arctic and Alpine Research, Boulder, Colorado

Assistant Professor **August 2011 – August 2014**

Colorado State University Department of Forest and Rangeland Stewardship, Fort Collins, Colorado

Research Scientist **June 2012 – August 2013**

University of Idaho Department of Forest, Rangeland and Fire Sciences, Moscow, Idaho

Graduate Research Assistant **January 2006 – May 2012**

University of Idaho Department of Forest, Rangeland and Fire Sciences, Moscow, Idaho

Graduate Research Assistant **July 2003 – December 2005**

University of Minnesota Department of Soil, Water and Climate, Minneapolis, Minnesota

REFEREED, PEER-REVIEWED PUBLICATIONS

5. **Berryman, E.**, H. Barnard, H. Adams, M. Burns, E. Gallo, and P. Brooks. **2015**. “Complex terrain alters temperature and moisture limitations of forest soil respiration across a semiarid to sub-alpine gradient.” *Journal of Geophysical Research - Biogeosciences*, 120, doi:10.1002/2014JG002802.

4. **Berryman, E.**, J.D. Marshall, and K. Kavanagh. **2014**. “Decoupling litter respiration from whole-soil respiration along an elevation gradient in a Rocky Mountain mixed-conifer forest.” *Canadian Journal of Forest Research*, 44:432-440.

3. **Berryman, E.**, J.D. Marshall, T. Rahn, M. Litvak, and J. Butnor. **2013**. “Decreased carbon limitation of litter respiration in a mortality-affected piñon-juniper woodland.” *Biogeosciences* 10:1625-1634.

2. **Berryman, E.**, J.D. Marshall, T. Rahn, M. Litvak, and S. Cook. **2011**. “Adaptation of cavity ring-down spectroscopy (CRDS) for batch analysis of ^{13}C of CO_2 and comparison to isotope ratio mass spectrometry (IRMS).” *Rapid Communications in Mass Spectrometry* 25:2355-2360.

1. **Berryman, E.**, R.T. Venterea, J.M. Baker, P.R. Bloom, and B. Elf. **2009**. “Phosphorus and greenhouse gas dynamics in a drained calcareous wetland soil in Minnesota.” *Journal of Environmental Quality* 38:2147-2158.

NON-REFEREED, PEER-REVIEWED PUBLICATIONS

1. **Berryman, E.**, P. Morgan, P. Robichaud, and D. Page-Dumroese. **2014**. “Post-fire erosion control mulches alter belowground processes and nitrate reductase activity of a perennial forb, heartleaf arnica (*Arnica cordifolia*).” Res. Note RMRS-RN-69. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 10 p.

PUBLICATIONS IN PREPARATION

Berryman, E., M.G. Ryan, J. Bradford, and R. Birdsey. “Belowground carbon flux in subalpine Rocky Mountain forests across a N deposition gradient.” for submission to *Global Change Biology*.

TEACHING

NR130: Global Environmental Systems, Colorado State University **2011-2014**
Fall and spring semester introductory Earth systems course with an emphasis on climate change. Average enrollment: 220.

Subject matter expert, The College Board **2012**
Consulted on scoring practices for the Advanced Placement (AP) Environmental Science examination

Reader, Educational Testing Services **2013**
Graded free-response section of AP Environmental Science examinations

TALKS

Berryman, E., D. Page-Dumroese, M. Jurgensen, P. Robichaud. Nov 18 **2014**. “Post fire erosion control mulch effects on soil organic matter turnover.” 7th International Conference on Forest Fire Research, Coimbra, Portugal.

Berryman, E., D. Page-Dumroese, W. Massman, C. Keyes, M. Jurgensen. Nov 17 **2014**. “Belowground impacts of pile burning in the Inland Northwest, USA.” 7th International Conference on Forest Fire Research, Coimbra, Portugal.

Morgan, P., **E. Berryman**, P. Robichaud, and D. Page-Dumroese. May 20 **2014**. “Experimental evidence that surface mulch applications alter soil nitrogen cycling following high severity wildfire.” Large Wildland Fires: Social, Political and Ecological Effects Conference, Missoula, Montana.

Berryman, E., H. Barnard, P. Brooks, H. Adams, M. Burns, and W. Willson. Apr 3 **2014**. “Terrain modulates hydrological couplings with soil respiration within the Boulder Creek drainage.” Hydrological Sciences Symposium, University of Colorado, Boulder.

Berryman, E., P. Morgan, P. Robichaud, D. Page-Dumroese, M. Moy, and C. Droske. Oct 7 **2013**. “Does post fire mulching help or hinder forest regeneration? Soil-based evidence from the High Park Fire.” Biology Department Fall Seminar Series, Regis University, Denver, Colorado.

Berryman, E., J.D. Marshall, T. Rahn, M. Litvak, and J. Butnor. Dec 5 **2012**. “Altered limitations to soil CO₂ efflux following a tree mortality event in a semi-arid woodland.” American Geophysical Union Fall Meeting, San Francisco, California.

Berryman, E., P. Morgan, P. Robichaud, D. Page-Dumroese, M. Moy, and C. Droske. Sep 19 **2012**. “Soil ecological impacts of mulch applications in post-fire rehabilitation.” Department of Forest and Rangeland Stewardship Fall Seminar Series, Colorado State University, Fort Collins, Colorado.

Berryman, E., J.D. Marshall, T. Rahn, M. Litvak, and J. Butnor. Sep 7 **2012**. “Soil CO₂ efflux in piñon-juniper ecosystems: Interactions with water, carbon, nitrogen, and mortality.” *Southwest Climate: Past, Present and Future* workshop hosted by Los Alamos National Laboratory’s Institute for Geophysics and Planetary Physics, Jemez Springs, New Mexico.

Berryman, E. Nov 16 **2011**. “Soil respiration responses to a piñon mortality event in central New Mexico.” Department of Forest and Rangeland Stewardship Fall Seminar Series, Colorado State University, Fort Collins, Colorado.

Berryman, E. May 5 **2011**. “Litter layer vs. mineral soil: insights into temperature sensitivity of soil respiration.” University of Idaho Society of American Foresters student chapter meeting, Moscow, Idaho.

Rahn, T., K. Jordanova, **E. Berryman**, A.D. van Pelt, and J.D. Marshall. Dec 12 **2010**. “Conversion of a continuous flow cavity ring-down spectrometer to measure ¹³C in CO₂ using static analysis of small volume grab samples.” American Geophysical Union Fall Meeting, San Francisco, California.

Berryman, E.M. Oct 21 **2009**. “Is soil respiration carbon-limited? Evidence from North America conifer forests.” Talk at the Faculty of Agriculture, University of Napoli Federico II, Naples, Italy.

POSTERS

Berryman, E., H. Barnard, P. Brooks, H. Adams, M. Burns, and W. Willson. Dec 10 **2013**. “Coupled soil respiration and water dynamics from plot- to catchment-scale in dry Rocky Mountain pine forests and the role of snowpack.” American Geophysical Union Fall Meeting, San Francisco, California.

Berryman, E., J.D. Marshall, T. Rahn, M. Litvak, and J. Butnor. Dec 11 **2010**. “Soil moisture, temperature, and carbon substrate influences on soil respiration in a piñon-juniper woodland.” American Geophysical Union Fall Meeting, San Francisco, California.

Berryman, E. and J.D. Marshall. Aug 8 **2009**. “Examining seasonal substrate and moisture limitation of soil respiration using field amendments.” Ecological Society of America Meeting, Albuquerque, New Mexico.

Berryman, E., N. Ubierna Lopez, R. Pangle, K. Kavanagh, and J.D. Marshall. Dec 14 **2008**. “Partitioning respiration fluxes in a forested mountainous ecosystem using natural abundance of stable carbon isotopes.” American Geophysical Union Fall Meeting, San Francisco, California.

Berryman, E., K. Kavanagh, and J.D. Marshall. Aug 9 **2007**. “Elevation affects soil respiration in a northern Idaho mixed-conifer forest.” Ecological Society of America Meeting, San Jose, California.

Berryman, E., R. Venterea, and J. Baker. Nov 9 **2005**. “Water table effects on phosphorus release and trace gas flux in a northwestern Minnesota shallow marsh.” Soil Science Society of America Annual Meeting, Salt Lake City, Utah.

GRANTS

USDA Forest Service, Rocky Mountain Research Station **2013 – 2014**

“Monitoring soil nutrients and vegetation response to post fire mulch applications” \$37,300

Los Alamos National Laboratory, Institute of Geophysics and Planetary Physics

2010 – 2012

University Collaborative Minigrant \$205,380

“Effects of piñon mortality on mechanisms governing soil carbon dioxide efflux in central New Mexico piñon-juniper woodlands”

PIs: Dr. Thom Rahn (LANL) and Dr. John Marshall (University of Idaho)

USDA Forest Service, Rocky Mountain Research Station **2009**

“Fire effects on soils and vegetation” (modification to 08-JV-11221634-236) \$40,550

Co-PI: Dr. Penelope Morgan (University of Idaho)